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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/772,300

02/06/2004

Helmut Michele

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7590

04/20/2006

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EXAMINER

TRAN, LY T

ART UNIT

PAPER NUMBER

2853

DATE MAILED: 04/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/772,300

Applicant(s)

MICHELE ET AL.

Examiner

Ly T. TRAN

Art Unit

2853

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-15 is/are rejected.
- 7) ☒ Claim(s) 4 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipate by Kobayashi et al (USPN 6,305,778).

With respect to claims 1-3, Kobayashi discloses a process for cleaning an inkjet printing head which has nozzle openings and ink channels which lead to them, in which electrical drive elements for ejecting ink out of the nozzle openings are located, in which the nozzle openings and the ink channels are forcibly flushed with a cleaning liquid (Fig.2: element 9, 10, 30), wherein the drive elements are triggered in an oscillating manner during the forced flushing with the cleaning liquid (Fig.8a-8g).

With respect to claim 2, Kobayashi disclose wherein some of the majority of drive elements present in the printing head are triggered at one time or wherein all the drive elements present in the printing head are triggered at the same time (Fig.8).

With respect to claim 6, Kobayashi wherein the flow of cleaning liquid in forced flushing is directed from the inside through the ink channels through the nozzle openings to the outside (Fig.2)

With respect to claim 10, Kobayashi discloses that wherein ink is used as the cleaning liquid (Column 9: line 30-45).

2. Claim 12 is rejected under 35 U.S.C. 102(b) as being anticipate by Change et al (USPN 5,541,628).

With respect to claim 12, Change disclose a device for cleaning an inkjet printer head, with a holding device for the printing head, connecting means for liquid-tight coupling of a detergent line to the nozzle openings of a printing head which has been inserted into the holding device, and a flushing device for delivering the cleaning liquid to the detergent line, wherein the holding device comprises electrical contact elements which are connected to an electrical trigger device and make contact with electrical operating terminals of the printing head which has been inserted into the holding device (Column 3: line 45-50, Column 4: line 15-65).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi (USPN 6,305,778) in view of Caren (US 20030011656).

Kobayashi fails to teach the flow of cleaning liquid in forced flushing is directed from the outside of the nozzle openings to the inside through the ink channels and the flow direction of the cleaning liquid in forced flushing is reversed.

Caren teaches the flow of cleaning liquid in forced flushing is directed from the outside of the nozzle openings to the inside through the ink channels and the flow direction of the cleaning liquid in forced flushing is reversed (Column 3: 0037)).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the reverse flushing as taught by Caren. The motivation of doing so is to prevent the wash fluid from leaving the print head through the dispensing orifice.

4. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi (USPN 6,305,778) in view of Hara et al (USPN 6,779,860).

Kobayashi discloses that the contact elements are connected to a signal generator and the contact elements are connected to a printer (Fig.2, Column 4: line 31-57) and the flushing device has a liquid pump (Column 7: line 54-55).

However, Kobayashi fails to teach the drive elements are triggered essentially with the operating frequency and/or amplitude of the printing head in printing operation of an inkjet printer and the drive elements are triggered with a frequency from roughly 5 to 20 kHz.

Hara teaches the drive elements are triggered essentially with the operating frequency and/or amplitude of the printing head in printing operation of an inkjet printer

and the drive elements are triggered with a frequency from roughly 5 to 20 kHz (Column 5: line 5-10).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the frequency about 10 kHz as taught by Hara. The motivation of doing so is to allow the range for the frequency of the flushing signal. The duration of the trapezoidal pulse and the level of the potential maintaining section may be relatively wide.

5. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi (USPN 6,305,778) in view of Premnath (US 20020163556).

Kobayashi fails to teach the electrical operating parameters of the drive elements are measured during triggering.

Premnath teaches the electrical operating parameters of the drive elements are measured during triggering (Column 3: [0028]).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to measure the electrical operating parameters of the drive elements as taught by Premnath. The motivation of doing so is to achieve a desired fluid characteristic.

Allowable Subject Matter

6. Claim 4 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 4 is allowable over prior art of record because at least prior art have not been found to anticipate or teach the drive elements are triggered phase-shifted.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ly T. TRAN whose telephone number is 571-272-2155. The examiner can normally be reached on M-F (7:30am-5pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier can be reached on 571-272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LT

April 13, 2006


STEPHEN MEIER
SUPERVISORY PATENT EXAMINER